

U.S. Antarctic Marine Living Resources Program

2011-2012 Weekly Field Reports

Cape Shirreff, Livingston Island

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Science Report

Seabirds

1. The failure rate of the gentoo reproductive study nests has remained the same since last week at 44%, 6% are brooding chicks and 50% are crèched. In the chinstrap penguin reproductive study 49% of nests have chicks, 9% are crèched and 42% have failed.
2. Of the nests of known-aged chinstrap penguins 32% have chicks, 8% have crèched and 60% have failed. This week the failure rate of known-aged gentoo penguin nests has remained the same at 44% and 54% have crèched.
3. We conducted the gentoo chick census on 29 January. These data await analysis.
4. We are nearly done weighing chinstrap and gentoo chicks of all reproductive study and known-aged breeder nests. The mass, taken when chicks are 21 days old, is used as a measure of chick condition before they crèche.
5. We continued diet sampling on chinstraps and gentoos this week. We followed adults returning from foraging trips back to their nests to verify that they were breeders and captured them before they feed their chicks. Samples were collected using the wet-offloading technique. Data on total mass of stomach contents, diet composition, and length and sex frequency of krill were recorded for each stomach sample.
6. We deployed 6 PTTs and 5 TDRs on gentoos on 26 January. The satellite transmitters will be used to determine where the penguins forage and the time-depth recorders give profiles of diving behavior. We will recover these instruments after one week of deployment.
7. The skuas are done hatching. Currently, nine pairs have failed, eight pairs have one chick and one pair has two chicks.
8. A juvenile macaroni penguin has been seen on the colonies most days this past week. It is starting to look like it will molt with the chinstraps on one of the study beaches.



Pinnipeds

9. The collection of GPS/Time depth recorder data for monitoring foraging locations as well as diving behavior of adult female fur seals has been completed. All instruments were recovered. All six females completed five trips to sea before two lost their pups. The remaining four females completed six trips to sea. At present, three of the six have surviving pups. In total we have collected GPS data on 36 foraging trips. Mean trip duration for these instrumented females is 4.38 days (s.d.=1.48; range: 1.29-6.71 days).
10. Twenty-six of our original 30 CCAMLR attendance females have completed six trips to sea before losing their pups. Of the four that lost pups before completing six trips, one completed three trips, one four trips, and the remaining two completed five trips to sea before losing their pups. To date eight of the 30 have lost their pups. As pups spend more time in the inter-tidal area we expect more losses to leopard seal predation.
11. Trip durations continue to be longer than average for the fifteen years we have been monitoring. Twenty-six of the thirty attendance study female completed at least six trips to sea before they lost their pup and 21 completed at least seven. Trip durations are as follows: first trip: 3.20d (s.d.=2.09, n=30), second trip 3.99d (s.d.=2.19, n=30), third trip 4.26 d (s.d.=1.83, n=30), fourth trip 4.31d (s.d.=1.16, n=29), fifth trip 4.40d (s.d.=1.22, n=28), sixth trip 4.24d (s.d. = 1.32, n=25). The maximum trip duration remains at 9.56 days.
12. Twenty-four of the pups of the 25 females that have completed six trips to sea have been weighed according to protocol. Mean mass gain from the start of female foraging cycles to completion of the sixth trip suckling bout is 96.4 g/d (s.d. = 22.16; n=24; range: 62.9-137.5).
13. We continue to monitor our adult tagged female population and mother pup pairs to get a measure of reproductive success and loss of pups due to leopard seal predation. Pups are now actively playing and swimming off shore where they are easily accessible to leopard seals. Our current estimate for pup loss to leopard seal predation as of yesterday (29 Jan) is at 31.2%.
14. We captured 16 fur seals this week for retrieval of archival instruments and deployment of over winter geolocation light sensors (GLS). We retrieved six time depth recorders (TDR's). Thus far we have deployed 59 of the planned 60 GLS fur seal over winter instruments for 2012.
15. This week we are still collecting our fifth fur seal diet sample of ten scats. To date 52 scats have been collected.
16. On 28 January we completed our tenth weekly Cape-wide Phocid census. We counted 273 southern elephant seals, 20 Weddell seals, and 20 leopard seals.



17. Leopard seals continue to arrive and as of 29 January we have recorded 291 sightings of 30 tagged seals. We have recorded an additional 39 sightings of untagged or otherwise unidentified seals. Twenty-one of the 30 tagged seals returned from previous years and the other nine we have tagged this year.
18. Two adult female leopard seals were captured and safely released this week. Samples for stable isotope analysis were collected along with scats to determine diet. In addition, two full resolution TDR's were deployed to monitor foraging behavior and habitat use during the fur seal breeding season.

Weather

19. The here-to-for unknown dry, sunny weather continued through this entire week. Winds averaged 9.9 mph mostly from the west with a maximum wind speed of 47 mph. Precipitation for the week was a whopping 0.01 inches bringing the season total to 2.76 inches. The average temperature was 2.7° C with a high of 11.3° C and a low of - 0.9° C. Mean daily solar radiation was 19,291 Wm². Sunrise is now at 4:29am and sunset is at 9:51pm.

Camp

20. On 30 January the human population of the Cape was again adjusted. Six scientists, one INACH logistics officer, and one American scientist departed via helicopters operated by the Chilean Navy. The current population is 5 people, all in the American camp. All Chilean cargo was offloaded from the island and the Chilean camp is closed for the season.
21. We bid an early morning farewell to Dr. Mike Goebel, the head of the U.S. AMLR pinniped program and the camp field leader for the entire season since camp opening. His upbeat personality, cooking and scientific leadership will be missed. We wish him a speedy and safe trip home via the Chilean Julio Escudero base on King George Island.
22. The sunny weather and, one 4-hour period without a seal capture to do, afforded a chance to continue much needed camp maintenance. Weathered sections of the exterior camp walls had paint scrapped/ removed using a shop-vac and prepped for painting. Additionally, the south wall of the supply hut was painted, and some window covers were repaired.



Doug



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